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THE DISTRIBUTION SECTOR IN A CPE: CUBA

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This paper looks at a relatively neglected topic (the distribution sector) in a setting where it has not been previously investigated before (a centrally planned economy, Cuba). The emphasis in the paper is on description, synthesis and interpretation rather than on analysis, which is necessitated by the nature of the topic and the state of the literature. Thus, the first section provides a conceptual framework for looking at the distribution sector which synthesizes its main economic functions, regardless of the economic system. The second section discusses the main characteristics of centrally planned economies that impinge upon the interpretation and description of the functioning of this sector. The third section presents a description of the sector relying on Cuban data sources with a minimum of massaging of the data. Finally, the last section interprets the functioning of the sector from 1980 to the current special period in peacetime. Among the main findings are: the quantitative importance of food distribution relative to other goods; the steady decline in levels of economic activity in the sector from 1982-85 to 1985-88, to the present period 1989-92; the decline in parallel market activity when farmers' markets are eliminated; and, finally, the extremely low level of accessibility to stores available to the Cuban population.

THE DISTRIBUTION SECTOR IN A CPE: CUBA

by

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Introduction

In most advanced economies the distribution sector accounts for 10 percent or more of GDP and a substantially higher percentage of employment. For example, in the U.S. it is second only to manufacturing in terms of contribution to GDP and it is first in terms of providing employment. Despite its quantitative importance, the study of this sector has been somewhat neglected by economists until very recently. At the conceptual level interest has been reawakened due to developments in the industrial organization literature, in particular modern analyses of the effects of vertical restraints on distribution, for example Rey and Tirole (1986) and Mathewson and Winter (1986), and recent conceptualizations of the role of retail firms in the economic system, for example Betancourt and Gautschi (1988, 1993) and Bliss (1988). At the practical level interest has been reawakened due to the realization that the role of this sector matters for important policy issues: Macroeconomic policy failure in Chile during the "tablita" period, for example Morande (1986), and the role of the distribution sector in preventing or facilitating trade associated with the Structural Impediments Initiative between the U.S. and Japan.

Neglect of this topic is even more pronounced in developing countries where attention has focused on the role of agriculture and the need to create a manufacturing sector. Nonetheless, very recent theoretical literature is seeking to explain how the division of labor or specialization actually arises and its implications for growth and its measurement, e.g., Borland and Young (1992) and Devereux and Locay (1992). Since part of the specialization process is the development of institutions specialized in wholesaling and retailing, the main components of the distribution sector, a greater

understanding of the role of this sector in the economic system of a less developed country facilitates the integration of this topic in a growing body of literature. Finally, the rapid expansion and dynamism of this sector in the emerging market economies of Central and Eastern Europe, for example Gadjka (1992), suggests it may be of interest to study the distribution sector in a CPE prior to a transition and Cuba offers one of the few remaining examples.

Section I contains a brief conceptualization of the role of the distribution sector in the economic system. Section II discusses the considerations that are relevant in adapting this framework to a centrally planned setting such as the one existing in Cuba. Section III presents available information on the size and structure of this sector. Section IV highlights several aspects important for the functioning of that sector in the Cuban setting. By the way of a conclusion we discuss briefly factors leading to changes in this sector within and without the current system.

I. Conceptual Framework

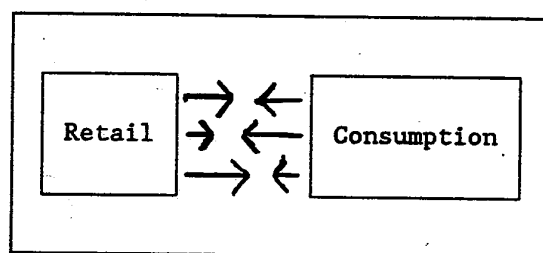
The economic function of the distribution sector is to transfer goods and services from producers to consumers. In the performance of this function different institutional forms arise in order to increase the gains from exchange between producers and consumers. In some instances, for example, producers distribute products directly to consumers; in other cases, wholesaling or retailing institutions emerge. These different forms do not arise by accident. On the contrary, they are due to the existence of transaction costs in general and distribution costs in particular. These distribution costs will exist regardless of the nature of the economic system.

As long as producers and consumers are separate in the spatial domain,

either the producer, the consumer and/or some institution specializing in the distribution function must bear this cost of exchange. The nature of the costs associated with this spatial separation will, of course, depend on the economic system, including the range of products generated by the production sector. Similarly as long as production and consumption are separated in the time domain, the producer, the consumer and/or some institution specializing in the distribution function must bear this cost of exchange. Once again the nature of this cost will depend on the economic system, including whether or not it is explicitly recognized. Its existence, however, will be independent of the economic system as long as there is nonsimultaneous production and consumption.

These two as well as other features of the distribution process have led to the development of the following characterization of distribution systems which can be illustrated in simple schematic form as follows.

Fig. 1. The Role of Cost Shifting in the Performance of the Distribution Function



For simplicity Figure 1 represents the interactions between the retail sector and the consumption sector in the performance of the distribution function. Similar figures can be constructed to represent direct interactions between the production and the consumption sector, the production and the wholesale sector, etc. The existence of simultaneous arrows linking the

sectors represents a set of distribution services that must be provided in any exchange between sectors. In systems other than self-sufficient households, a set of five broad categories of distribution services have been identified: accessibility of location, assortment, information, assurance of product delivery in the desired form and at the desired time, and ambiance. These are five different aspects of bearing and allocating the distribution costs of exchange, Betancourt and Gautschi (1988). The drawing of arrows of different lengths emanating from the two different sectors purports to indicate the possibilities for shifting costs in the provision of distribution services between these sectors or agents.

From the economic point of view distribution services are outputs of an economic agent that must be provided at some level in order to bear the distribution costs associated with the exchange of goods and services between any two sectors. A methodological advantage of this formulation is the ability to characterize the economic behavior of the producing agent in terms of a joint cost function. On the demand side these distribution services can be viewed as fixed inputs into the production functions of the recipients of the explicit goods and services that are transferred in an exchange. In the case of the consumption sector, these distribution services can be viewed as fixed inputs into household production functions of consumers. The implications for demand analysis have been developed by Betancourt and Gautschi (1992). In the case of other economic agents similar implications follow, Betancourt (1992a). This conceptualization allows one to capture relevant economic features of two essential characteristics of the role of distribution costs in any exchange. First, the distribution services provided by economic agents in any exchange are not explicitly priced; secondly, the

bearing of the costs of providing these distribution services can be allocated differently among any two agents participating in an exchange. Furthermore, associated with every exchange there is an allocation of these costs. Most of the time this allocation is implicitly done, sometimes it becomes explicit. For instance, the allocation of part of the cost of providing accessibility of location becomes explicit in an exchange between a retailer and a consumer when the latter charges an explicit fee to the former for home delivery.

In capitalist economies, these characteristics of distribution systems provide the basis for the existence of price dispersion in monopolistically competitive market structures, product choice in distribution services and the operation of multiproduct, multimarket firms in the distribution sector. Distribution services provide instruments for nonprice competition, affect the pricing policies of firms and the welfare evaluation of policies, for example Betancourt and Gautschi (1993).

Distribution systems will differ across economic systems because the main internal components (production, wholesale, retail and consumption) differ in their characteristics or because the external environment in which they operate differs across economic systems, i.e., differences in the legal framework, available infrastructure and institutional characteristics. Nevertheless, the basic function to be performed by the distribution sector remains the same across economic systems, namely bearing and allocating the distribution costs associated with exchange through the provision of distribution services.

II. Implications for a CPE

An issue that comes to the surface immediately is whether or not the characterization of agents behavior in terms of optimizing models is

appropriate in a CPE. Standard practice by Western economists is to assume that it is appropriate to do so and to exert some effort in characterizing the environmental constraints faced by the agents. An excellent example of this argument in the case of labor supply is provided by Sanguinetti (1992). We shall adopt this procedure. Indeed, the discussion of the economic function of the distribution system in the previous section already points in this direction. A general discussion of the applicability of the new institutional economics to the Cuban economy is available in Betancourt (1992b).

CPEs are frequently characterized as shortage economies where rationing or unavailability of goods and services are pervasive features of economic activity. Three important factors in the operation of the distribution sector arise from this characteristic. First, since the distribution sector is normally responsible for carrying out the rationing procedure, the rationing scheme, including retrading opportunities, and the extent of the shortages would be important determinants in the functioning of this sector and require special attention. Secondly, the extent of competition in distribution would also be an important factor in the functioning of the system. In some CPEs alternative markets² are allowed and the benefits generated by the distribution sector will depend on this characteristic. In a monopolistically competitive market if prices are fixed increased competition increases welfare by generating increases in the levels of distribution services provided to consumers, Betancourt and Gautschi (1993). Thus, parallel markets even with price ceilings can be welfare enhancing. Finally, monitoring in state owned enterprises creates a principal agent problem between the state and its

²Alternative markets can take the form of farmers markets, relatively free of government control, or parallel markets run by the government.

employees that generates a sizable number of transactions of an informal nature. The small bulk of the commodities exchanged at the retail level provide a particular auspicious setting for the proliferation of these informal transactions in the distribution sector. Hence, the role of informality, defined as illegal transactions, in this sector is worthy of special attention. Incidentally, an insightful account of how the view of legality in the Soviet system leads to informal transactions is available in Litwack (1991).

One last feature of CPEs that has a special bearing in an analysis of the distribution sector is the nature of their accounting and organizational systems. As pointed out by Nove (1977), trade is basically divided into external and internal trade and the organizations that operate in the two sectors as well as the statistical information associated with their operations are separate from each other. When one looks at the distribution sector one usually focuses on the data for the internal trade sector. The main consequence of this is an underestimation of the role of the distribution sector in the economic system when compared with capitalist economies. For instance, in the U.S. Census of Wholesale Trade the activities of wholesalers dedicated exclusively to the import or export function would be counted as part of the distribution sector.

To conclude this discussion, it is worth noting that many of the same concerns about the operation of the distribution system would arise from a socialist perspective. In a recent article on the role of the distribution sector under socialism F. Gomez (1989, pp. 44-45) argues that commercial organization is somewhat backward under socialism relative to advanced capitalist countries and that some capitalist practices, purged of their

objectionable features, should be considered for adoption because of their efficiency and time saving aspects. Since time saving is a common feature of almost all of the distribution services emphasized in the previous sections, it may be useful to adopt the framework of the previous section even from a socialist perspective. More generally, there seems to be an increasing preoccupation with the satisfaction of consumer wants in Cuba. This is manifested in appeals for scientific analyses of supply and demand for consumer products and the benefits they may bring, for example, Suarez-Lugo (1990), as well as in attempts to reduce waiting time at stores during the "special period."³

III. The Distribution Sector in Cuba: An Overview

The distribution sector in Cuba is broken up into five broad categories: supply of technical and material products; procurement of agricultural products (acopios); procurement of recycled products; wholesale trade; and retail trade. Most of the statistics available in the "Anuario Estadístico", however, cover only the last two categories. One exception is information on the number of warehouses available. In the Appendix, Table A1 reproduces the information available on this topic in the 1988 statistical yearbook. As can be seen from the table, there was a considerable reduction in the number of warehouses between 1982 and 1983, the only two years available, at the same time that the area available for storage in the remaining warehouses increased. A similar process has taken place in warehouses with refrigeration. Two other pieces of information from this table are worth noting: First, the number of warehouses devoted to technical and material

³Personal communication to the author by Pedro Monreal, April 1992.

supplies takes up over 70 percent of the available storage area and over 50 percent of the available refrigerated storage volume; second, the refrigerated storage volume for food products decreased between 1982 and 1983.

A recent article by J. Neyra Saiz (1989) provides some insight into this process. It looks in detail at the wholesaling of nonfood products and it explains several characteristics of the system. There are two wholesale networks for nonfood products: a national one under the Ministry of Internal Trade, consisting of 7 enterprises located in Havana City, and a territorial (regional) one, consisting of 14 enterprises controlled by the "Poder Popular" in each of the provinces. The process of closing down old warehouses and building new ones with better equipment and larger storage areas has been taking place during the 1980s but at a much faster pace in the warehouses controlled by the national network than in those controlled by the territorial network. This process is viewed by Neyra Saiz as following the economic rationalization of the wholesale system. He goes on to argue that the form of organization provided by the territorial network prevents specialization in wholesaling thus lowering efficiency. Finally, it is also suggested that going back to an administrative system with 6 provinces rather than the current 14 would improve the functioning of the distribution system.

In Table 1 we present information on the value of wholesale sales during the 1980s. We present data for 1980, 1982, 1985 and 1988. The choice of years was determined by the following factors: the introduction of a new accounting system in 1977, a price reform in 1981, the demise of the agricultural markets after 1985 and the last year in which a complete statistical yearbook was published (1988).⁴

⁴A much smaller yearbook is available for 1989.

Table 1. Wholesale Sales (Millions of Pesos)

	1980	1982	1985	1988	82/80	85/82	88/85
Total	7290.9	9527.7	11,612.6	11,716.8	1.307	1.219	1.009
Food	2411.2	2907.0	3729.3	3905.6	1.206	1.283	1.047
Beverages	940.2	1451.4	1456.8	1794.8	1.544	1.004	0.957
Nonfood	3192.8	4249.8	5235.6	5260.2	1.339	1.232	1.005
Durables	498.0	541.8	731.3	689.3	1.088	1.350	0.943

Source: Table X.2 Anuario Estadístico, CEE, 1988.

Several aspects of the table stand out. First, in every category of products the ratio of wholesale sales decreases between 85/82 and 88/85. This reflects the general slowdown of economic activity since 1985. Secondly, sales of durables are between 5 and 10 percent of total wholesale sales in every year. This reflects the developing country nature of the Cuban economy. In the U.S., for example, durables make up about 50 percent of wholesale sales. Of course, this difference is overstated because durables sold as part of the branch of supplies of technical and material products are not included in the Cuban statistics. Finally, food sales account for more than 25 percent of the sales of the wholesale sector, which contrasts with about 15 percent for U.S. merchant wholesalers in 1987.

In the Appendix (Table A2), we provide information on the value of wholesale sales going to the retail sector for completeness. Two facts about the distribution system emerge from this table: First, over 50 percent of total sales of the wholesale sector go to the retail sector; the remainder goes to enterprises classified in other branches of economic activity. This is true for every category except beverages where the proportion going to the

retail sector is much lower than 50 percent every year. A second fact emerges from comparing Table A2 in the Appendix with Table 2 below, which provides information on retail sales for the same years. Namely, the retail sector obtains between 50 and 60 percent of its products from the wholesale branch; the remainder comes from other branches, in particular agricultural procurement centers (acopios).

Table 2. Retail Sales

	1980	1982	1985	1988	82/80	85/82	88/85
Total	6055.3	7738.9	9119.5	9500.3	1.278	1.178	1.042
Retail Network	4235.0	5459.6	6445.3	6672.6	1.289	1.181	1.035
Eating & Drinking Establishments	1820.3	2279.3	2674.2	2827.7	1.252	1.173	1.057
Restricted Access	156.7	192.6	229.1	222.3	1.229	1.190	0.097

Source: Tables X.9-X.11 Anuario Estadístico, CEE, 1988.

Table 2 yields the same pattern of decline in economic activity as Table 1. That is, in every category there is a decrease in the ratio of retail sales between 85/82 and 88/85. The retail sector is decomposed into two broad categories: the retail network and eating and drinking establishments. The latter category contains sales through cafeterias at the work place or in schools, which are the main component in the restricted access entry. For completeness, Table A3 in the Appendix presents the distribution of sales in the retail network by type of stores. The most striking pattern that emerges is the high and increasing percentage of sales made up by food stores, i.e., from 48.2 percent in 1982 to 52.5 percent in 1988. The corresponding percentage in the U.S. was about 25 percent in 1987.

An important phenomenon in the development of the distribution system in the 1980s was the growth of parallel markets. Table 3 presents the available statistics. Its sales increased rapidly between 1983 and 1985 but slowed down considerably between 1985 and 1988, making up 16 percent of total retail sales in 1988. The slowdown is consistent with the general slow growth of economic activity during 1985-1988. Nevertheless, it is noteworthy that during the 1982-85 period the parallel markets had to compete with farmers markets and crafts markets whereas during the 1985-88 period it had much less competition.

Table 3. Retail Sales Through the Parallel Market (Millions of Pesos)

	1983	1985	1988
Total	565.0	925.3	1018.1
Percent of Retail Sales	10.3	15.2	16.0
Food	414.1	555.3	613.9
Percent of Food Retail Sales	14.5	17.7	17.8
Nonfood	150.9	370.0	404.2
Percent of Nonfood Retail Sales	8.0	17.1	19.4

Source: Tables X.18-X.20 Anuario Estadístico, CEE, 1988.

Table 4 provides information on the employment generated by all branches of the distribution sector. Total employment growth during the period follows the pattern evidenced by the growth of sales, namely a slowdown between 1985 and 1988. The categories, however, yield two exceptions -- employment in agricultural procurements and in the supplies of technical and material products grew more rapidly during 85-88 than during 82-85. The percentage of the civilian labor force employed in the distribution sector is slightly over

10 percent in each of these years, e.g., 11.1 in 1988; in Japan and the U.S. it is about 17 percent for example. Finally, since 14 percent of the labor force is employed in the branch of supplies of technical and material products and this branch controls over 70 percent of the storage area, this data suggest a higher level of efficiency in this branch than in the wholesale or agricultural procurement branches.

Table 4. Employment in Distribution (Thousands of Workers)

	1980	1982	1985	1988
Total	297.7	318.4	360.4	381.0
Wholesale Network	37.7	43.6	48.6	51.3
Retail Network	122.2	140.7	152.8	155.6
Eating & Drinking Establishments	66.3	60.5	77.2	82.9
Technical & Material Supplies	51.0	52.3	52.4	53.4
Agricultural Procurements	18.1	18.8	25.3	37.8
Recycling	2.4	2.5	4.1	n.a.

Source: Table X.26 Anuario Estadístico, CEE, 1988.

One interesting piece of information in a retail setting is the number of establishments. Table 5 presents this information for various categories and subcategories of the retail sector. There is an increase for all entries, except nonfood stores, between 1982 and 1985. Other things equal such increases are welfare improving since they lower purchasing costs to consumers. The number of employees per establishment in the retail sector

rose from 5.18 to 5.34 between 1982 and 1985. In Japan, on the other hand, the number of persons engaged per outlet was 3.9 in 1985, Maruyama (1992). Finally, the number of establishments in the retail network per thousand members of the population was 2.81 in 1985 in Cuba; in Japan this density was 13.5 in 1985. Japan is notorious for its abundance of small outlets and this is also argued with respect to the Cuban retail sector, Clark (1990);⁵ incidentally, assortments are much deeper and perhaps broader in Japan. In the U.S. this density was 2.71. Hence, with assortments much closer to the Japanese in terms of breadth, the accessibility of location of the stores is much closer to the U.S. This indicates that the retail sector provides very low levels of these two distribution services to consumers.

Table 5. Number of Retail Establishments

	1980	1982	1985
Retail Stores	28,719	27,153	28,593
Food Stores	17,001	16,406	17,317
Nonfood Stores	2,680	3,770	3,498
Eating & Drinking Establishments	22,461	25,382	28,323
Limited Access	13,608	16,979	17,950

Source: Table X.28 Anuario Estadístico, CEE, 1988.

To conclude this overview, we note that the statistical yearbook also provides information on personal and repair services as part of internal trade statistics. The information is summarized in Table A4 of the Appendix. Total

⁵The numbers contradict the perception in the case of Cuba and this perception may be due to the absence of large stores.

expenditures follow a similar pattern to those for retail and wholesale sales over the 1980s. Expenditures in these categories are equivalent to 19 percent of wholesale sales. They are of interest primarily because the trades that were liberalized during the IV Communist Party Congress in 1991 fall in these categories.

IV. Important Factors in the Functioning of the Distribution System in Cuba

In Cuba there are three interrelated factors that play a key role in the functioning of the distribution system: the rationing system, alternative markets and informal exchanges. The role of these three factors, however, varies over time depending on general economic conditions and ideological initiatives of the political leadership. We will discuss how these factors have evolved from 1980 to the current "special period in peacetime."

A sympathetic and engagingly written account of the distribution system in Cuba up to the early 1980s is available in Benjamin, Collins and Scott (1984). Several characteristics of the system are important for our purposes. A ration book per household is distributed each year.⁶ The households register with the National Rationing Board, indicating the neighborhood stores where they are to acquire the rationed items. Besides the grocery store this may include a butcher's shop, a vegetable stand, and a dairy shop. Prices of the rationed items were fixed from 1962 to 1981, quantities can vary with availability. The same stores may also sell products that are not rationed or in excess of the ration at higher prices. Lines are frequent at all the stores and alternative queuing schemes have been implemented to allow shorter lines for households where every adult is employed.

⁶There is one for food and one for nonfood items.

Such a system provides a fertile ground for the development of barter trade and informal transactions. For instance, butchers in Cuba have been frequently accused of shortchanging customers with the proportions and weights of the rationed items. In general those employed in the distribution sector are in a favored position to engage in informal transactions, for additional examples see Perez-Lopez (1992). One of the most important functions of this sector in any economic system is to provide assurance of product delivery in the desired form, which entails breaking the bulk of items into smaller sizes. In a heavily controlled CPE, private economic incentives to take advantage of this favored position to participate in the informal economy are powerful and the probability of detection tends to be low in settings associated with small items.

The extent of the informal economy, especially that generated by the nature of the rationing system, will be affected by the existence of alternative markets. Insofar as alternative markets exist, for example farmers' markets or parallel markets, the incentives for barter exchanges and informal transactions will be reduced. Basically the competition from these alternative supply sources lowers the gains from barter exchanges or informal transactions. In the case of Cuba farmers' markets were encouraged, somewhat grudgingly, during the 1980 to 1985 period. As we saw in the previous section, the parallel market also grew at a rapid rate in terms of sales between 1982 and 1985; separate locations for those markets were also built during this period. Benjamin, Collins and Scott (1984) report a tendency for higher quality and shorter waiting lines in the farmers' markets than in the parallel markets. Indeed, the same authors report internal discussions on the merits and demerits of the rationing system at this time. Of course,

generally favorable economic conditions facilitated these developments.

Since 1986 this system was modified by the elimination of the farmers' markets. Political directives under the so-called rectification process played an important role in this change. Rodriguez (1990) provides a justification of this process from a Cuban perspective. One feature of the modified system is the creation of a State Agricultural Board, reported by Balari (1990). Another one is the slower growth of the parallel markets singled out in the previous section. A critical, compelling account of consumption and distribution activities covering this more recent period is available in Clark (1990). At this point, however, it is useful to note two general features of this system in the second half of the 1980s. Deterioration in general economic conditions enhance the importance of a rationing system and the gains from informal sector activities. The elimination of farmers' markets operates in the same direction by eliminating competition for the parallel market; namely, it enhances the scarcity value of informal sector provision of quality, assortments and shorter waiting times.

Clark provides information on the quantities available of rationed products for selected articles in several years. Comparisons of availability are difficult because the ration supplies a much different proportion of the diet depending on the period. Since 1983 was a relatively good year compared with 1989, we will compare these two years to get an indication of the tightening or loosening of the rationing system. The 1983 information comes from Benjamin, Collins and Scott (1984, p. 35); the 1989 information comes from Clark (1990, p. 279). Out of 12 categories in which a comparison is possible the amount available under the ration was the same in 8; it went down in two of them, beef and beans, and it went up in two, chicken and bread. One

difference, however, is that in 1983 additional purchases could be made in the farmers' market or in the parallel markets whereas in 1989 they could only be made in the parallel market or in the black market. Thus, the elimination of the farmers' markets with a given level of rationing can be presumed to have fostered the development of the informal economy in the second half of the 1980s.

The process of relying on the rationing system cum the black market or informal economy has been accentuated by the vicissitudes of the economic system since the demise of Eastern European socialism in 1989 and the August coup in the Soviet Union in 1991. In a recent paper Roca (1992) describes some of the changes in the distribution system as a result of the "special period." Products are not to be placed in the parallel markets if they are scarce in the rationing network. Hence, 28 items available in the parallel market have been placed under the rationing network since 1990. In one of the parallel markets sites, for example, there were in 1990 115 fewer items than before. Among industrial products 181 were placed into the rationing system. Thus, the advent of the "special period in peacetime" has resulted in an increase in the importance of the rationing system in the distribution sector, at the expense of the parallel market. Of course, private economic incentives for informal sector activities have increased as a result.

One of the major changes affecting the distribution system, and the economy as a whole, in the recent period is the Food Program or "Programa Alimentario." Mesa-Lago (1992) provides a thorough description of the program. Here, we will summarize the main features that impact the distribution system. The essence of the program is to use the excess labor released by the shortages, generated through the loss of traditional trading

partners, in newly created state farms, especially near the cities of Havana and Santiago, in order to increase agricultural output and makeup for reduced imports. As a rationalization of the distribution system through generating shorter supply lines for major population centers, these changes could be beneficial. The problem, of course, lies in the opportunity cost of the resources (especially land) used for these purposes and in the feasibility of the scheme. With most agricultural activities weather patterns are critical in determining outcomes and some of the internal discussions reported by Mesa-Lago suggest that Cuban technicians expect the weather to be a critical factor in determining outcomes in this case. In addition, some problems are reported with regard to the efficiency of the agricultural procurement centers in delivering output to retail outlets. Such problems would be consistent with the information on the relative productivity of this branch reported in the discussion of Table 4.

Concluding Observations

Given the present circumstances of the Cuban economy the opportunities for change within the system are limited, but there are internal pressures for change. These vary from technical discussions to improve the functioning of the distribution system to the high level of private economic incentives for informal sector activities. The latter can only be countered by increasing the costs of informal sector participation, presumably through a higher level of repression or moral suasion. The regime's position on the Ochoa trial, as reported by Oppenheimer (1992) for example, illustrates both mechanisms.

Two elements are critical in evaluating substantial changes in the current distribution system. Given the importance of food products in the distribution sector and limited import capacity in the foreseeable future,

substantial increases in agricultural output will be required for major changes in the distribution system to be worthwhile. Fuel shortages and inadequate transportation, the prevalence of multiple earner households and the low density of outlets create a high level of repressed demand for several distribution services, in particular the provision of accessibility of location by both wholesalers and retailers. Hence, expansion in the number of outlets and warehouses and/or of their assortments will have to be major features of any substantial changes that improve the economic efficiency of the distribution system.

Appendix

Table A1: Network of Warehouses

Concepts	ALMACENES							
	Total				De ellos con refrigeración			
	Cantidad (u)		Area (m2)		Cantidad (u)		Capacidad (m3)	
	1982	1983	1982	1983	1982	1983	1982	1983
Total	3618	3342	4590020	5998143	325	240	240168	332930
Productos alimenticios	506	461	515129	512497	157	153	106346	87443
Productos no alimenticios	608	692	619427	636919	2	3	225	339
Productos farmaceuticos y medicos	72	90	70656	85869	42	41	22500	32970
Libros y revistas	53	45	33601	31171	3	1	627	-
Frigorificos	18	18	2931	2931	18	18	35637	35637
Abastecimiento tecnico material	1412	1278	3158560	4443982	94	18	73985	175694
Centros de acopio	207	183	135001	232529	9	7	848	847
Sub-centros de acopio	90	90	16727	16781	-	-	-	-
Puntos de acopio								

Source: Table X.27 Anuario Estadístico, CEE, 1988.

Table A2. Flow of Wholesale Sales to the Retail Sector

	1980	1982	1985	1988
Total	4173.3	5067.6	6046.5	6178.6
Food	1357.3	1699.3	2054.0	2212.2
Beverages	274.4	258.3	363.3	429.2
Nonfood	2137.6	2654.0	3057.7	2970.2
Durables	398.4	447.5	595.8	584.5

Source: Table X.4 Anuario Estadístico, CEE, 1988.

Table A3. Distribution of Sales by Type of Retail Establishments

	1980	1982	1985	1988
Food Stores	1998.6	2687.1	3196.2	3501.3
Nonfood Stores	1543.6	1779.0	2188.3	2100.8
Pharmacies & Optical Products	238.8	262.5	302.3	320.7
"Rastros"	56.0	92.7	95.3	72.3
Servicentros	175.9	278.5	271.3	269.8
Other	222.1	359.8	391.4	407.7
Total	4235.0	5459.6	6445.3	6672.6

Source: Table X.16 Anuario Estadístico, CEE, 1988.

Table A4. Personal and Repair Services (millions of pesos)

	1980	1982	1985	1988
Repair	120.3	140.2	170.0	165.1
Personal	46.0	54.6	51.5	65.2
Total	166.3	194.8	231.5	230.3

Source: Table X.38 Anuario Estadístico, CEE, 1988.

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